REMARKS/ARGUMENTS

Applicant respectfully requests entry of this Amendment under 37 C.F.R. §1.116(b)(2), which states "[a]n amendment [after final] presenting rejected claims in better form for consideration on appeal may be admitted." Claims 10 and 11 have been narrowed by a change in dependency and thus place these rejected claims in a better form for consideration on appeal by narrowing the issues on appeal.

Claims 1-20 are pending in the present Application, Claim 20 having been added by the previous amendment. Claims 10 and 11 have been amended to change dependencies. No new matter is added.

By way of summary, in the outstanding Final Rejection Claims 1-20 have been rejected under 35 U.S.C. § 103 as being unpatentable over Englemeier (U.S. Pat. No. 5,423,549, hereafter Englemeier) in view of Barnhill (U.S. Pat. No. 5,112,055, hereafter Barnhill).

Applicant respectfully traverses the rejection of Claims 1-20 under 35 U.S.C. §103(a) as being unpatentable over Englemeier in view of Barnhill, for the following reasons.

SUMMARY OF THE ARGUMENT

None of the prior art publications of record, alone or in combination, discloses or render obvious a golf ball comprising "a transmitter coupled to [a] power source and configured to emit an electromagnetic signal; a shock actuated switching device contained within the body; and a timing device configured to control transmission of the electromagnetic signal for a predetermined time period after [shock] actuation of the switching device," as stated in Claim 1.

Englemeier describes a golf ball with a transmitting unit such that "after a certain discharge time" a battery depletes and the unit "stops transmitting the transmission signals."[2]

[2] Englemeier, Abstract.

Barnhill describes a noise emitting golf ball, with a shock actuated switching device, that "keeps sounding until the player finds it and wishes it silent for the next shot."[3]

Neither Englemeier nor Barnhill discloses "a timing device configured to control transmission of the electromagnetic signal for a predetermined time period after [shock] actuation of the switching device." In an attempt to cure this deficiency, the Official Action relies on a new definition for "predetermined" which has no basis in the specification or in the dictionary. Accordingly, Applicant submits that it is improper for the Official Action to include a lexicography with new definitions for well defined terms to cure the deficiencies of a hindsight reconstruction of the claimed invention.

Rejections under 35 U.S.C. § 103(a) are based on the finding that no prior art reference discloses each feature recited in the claims, but all features are disclosed in the applied references and the combining of these references is proper. Applicant respectfully submits there is no substantial evidence on the record to support the assertions in the final rejection that each feature recited in Applicant's independent or dependent claims is disclosed in the cited references.[4] In particular, neither Englemeier nor Barnhill teach or suggest "a timing device configured to control transmission of the electromagnetic signal for a predetermined time period after [shock] actuation of the switching device," but on the contrary, both teach a golf ball which emits signals for an **indeterminate** time period, as discussed in more detail hereinafter.

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[3] Barnhill, Abstract.

[4] In re Zurko, 59 USPQ2d 1693, 1697 (Fed. Cir. 2001) "... With respect to core factual findings in a determination of patentability, however, the Board [or Examiner] cannot simply reach conclusions based on its own understanding or experience -- or on its assessment of what would be basic knowledge or common sense. Rather, the Board [or examiner] must point to some concrete evidence in the record in support of these findings. Baltimore & Ohio R.R. Co. v. Aderdeen & Rockfish R.R. Co., 393 U.S. 87, 91-92 (1968) (rejecting a determination of the Interstate Commerce Commission with no support in the record, noting that if the Court were to conclude otherwise "[t]he requirement for administrative decisions based on substantial evidence and reasoned findings -- which alone make effective judicial review possible -- would become lost in the haze of so-called expertise"). "

Further, Applicant submits that the final rejection is based upon a hindsight reconstruction of Applicant's claimed invention because Barnhill teaches away from the claimed combination. Therefore, the final rejection has failed to provide a *prima facie* case of obviousness.

The claimed invention is advantageous in that the claimed golf ball includes a timing device which controls transmission of signal only for a limited --predetermined-- time period, thereby to conserve and prolong battery life, in contrast with Englemeier which teaches the continued transmission of signal pulses until its energy store is depleted,[5] or Barnhill which requires manual termination of transmission.

A. The subject matter of Claims 1, 5-9, 12-20 is patentable over Englemeier and Barnhill.

In the past, golf balls have emitted signals with sound,[6] nuclear radiation,[7] and electromagnetic radiation.[8] However, the conventional signaling golf balls lack timing devices and emit signals for indefinite periods of time to assist players to "hunt" for a ball.

Englemeier describes a golf ball with a transmitter unit 3, an energy store 4, an energy receiver 7, a control unit 13, and a constant current source 24. Englemeier discloses:

> [the] control unit . . . actuates the transmitter unit, with the energy store [4] having a capacity which is dimensioned for a temporally restricted operating period of the control unit and/or the transmitter unit. . . . [T]he transmitter operation is restricted timewise since the transmitter unit can only operate as long as the residual capacity of the energy store is sufficient to operate the control unit or the constant current source. In this manner it is possible to reliably prevent the transmitter unit being able to transmit disturbing signals over a longer period of time with reducing intensity in accordance with the residual capacity of the energy store.
>
> After the termination of the transmission operation of the transmitter unit of a golf ball, renewed operation is only then possible when the golf ball

[5] Englemeier, col. 2, lines 16-19.
[6] Barnhill.
[7] Englemeier, column 1, lines 62-64 (citing GB-A 11 72 449).
[8] Id., Abstract.

> has been found and recharged. In this way it can be reliably ensured that the localization of another golf ball is not hindered in undesirable manner. . . .
>
> [T]he transmitter unit is controlled by a control unit, connected to the energy store in such a way that the transmitter unit generates periodic transmission signals. . . .
>
> This kind of control unit is realized . . . for pulsed operation of the transmitter unit [which] is controlled by the output signal of the differentiator stage.[9]

Englemeier reiterates, the transmitter unit 3 is "connected via a transistor switch T1 to the storage capacitor 4 in order to generate a pulsed transmission signal for the purpose of energy saving."[10] This pulsed transmission is generated by switching the transistor with a rectangular oscillation from the control unit 13. The control unit 13 is comprised of an astable flip-flop stage 14 and a differentiating stage 15 which "generates periodic transmission signals."[11] But since the transmitting unit periodically[12] transmits signal pulses for an indeterminate time until the energy store is depleted, it is not a timing device which controls the transmission for a predetermined time period after shock actuation.

Indeed, the Englemeier golf ball functions so that, "[a]s soon as the energy store 4 [i.e., capacitor 4] is charged, the subsequent components 13 and 24 and in particular the transmitter unit 3 starts to work, i.e. transmitter signals are radiated via the antenna 25 of the transmitter unit 3."[13] The control unit 13 ensures periodic transmission signals,[14] while the constant current source 24 ensures that the "ball-side transmitter unit generates locating signals with constant intensity during the transmitter operation."[15] As a result, "the transmitter operation is restricted timewise since the transmitter unit can only operate as long

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[9] Id., column 2, line 4, lines 12-49.
[10] Id., column 4, lines 60-63.
[11] Id., column 2, line 37.
[12] Defined: "Having or marked by repeated cycles"; "Recurring or reappearing from time to time; intermittent." THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE (4TH ED. 2000).
[13] Englemeier., column 4, lines 51-54.
[14] Id., column 2, lines 34-42.
[15] Id., column 2, lines 16-19

as the residual capacity of the energy store is sufficient to operate the control unit or the constant current source."[16]

Englemeier teaches that transmission is continuous as long as the energy store retains energy sufficient for further transmission, and transmission of signal is maintained even during recharging of the energy store. According to Englemeier, transmission is limited by "the residual capacity of the energy store ... ."[17] Thus, according to Englemeier, when the golfer finds his ball before the energy store is depleted, continuous transmission is maintained while recharging and remains uninterrupted and continuous for at least another recharging cycle. Therefore the Englemeier golf ball transmits pulsed signals continuously until the Englemeier energy store is depleted, or until the energy store is recharged and then depleted, *not for a predetermined time period.* According to Englemeier, the transmission period of transmitted pulses is not at all controlled. Instead, the transmission period of Englemeier varies as a function of player convenience, and is **indeterminate,** not predetermined as claimed.

Indeed, Englemeier merely discloses a golf ball having a finite energy source and which transmits pulse signals so long as the energy source is not depleted. Englemeier fails to teach shock actuated initiation of transmission as claimed, and fails to teach the claimed "timing device configured to control transmission of the electromagnetic signal for a predetermined time period after [shock] actuation of the switching device." The final rejection does not address the failure to teach the recited timing device, a concrete structural limitation of the claimed invention, and in an attempt to remedy the "predetermined time period" deficiency of the references, states,

> ... [t]he instant specification lacks a quantifying length a predetermined time period. Therefore, it is reasonable to define it as any length of time from the

[16] Id., column 2, lines 20-27.
[17] Id., column 2, lines 16-19.

> moment of activation to infinity or from the moment of activation until the power reaches zero.[18]

It is respectfully submitted that this flies in the face of reason in view of the examples provided in the specification that the predetermined time period of transmission "is a very short time, i.e. a few seconds"[19] or perhaps "20 seconds."[20] Clearly, the definition proffered in the final rejection is not that of a "predetermined time period," such as for example "a few seconds" or "20 seconds," but instead an **indeterminate**[21] time period. In this way, the outstanding final rejection usurps Applicant's right to be his own lexicographer, and in so doing supplants well defined and readily understood language with a new inaccurate definition to cure the deficiencies of a hindsight reconstruction of the claimed invention.

Accordingly, Applicant respectfully submits, given Applicant's disclosure, the plain and ordinary meaning of "predetermined" is to be interpreted consistent with the examples given in the specification and the dictionary definition of "predetermined," as for example provided by THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE, FOURTH EDITION (2000) (defining predetermine: "To determine, decide, or establish in advance.") Thus, it is respectfully submitted that Englemeier not only fails to disclose a distinct timing device, but also fails to disclose shock actuation and fails "to control transmission of the electromagnetic signal for a predetermined time period [i.e., a time period established in advance] after [shock] actuation . . .."

The final rejection acknowledges that Englemeier does not disclose a switching device contained within the body that actuates due to a detected shock and relies upon Barnhill to cure this deficiency.

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[18] Final Rejection, page 3, second paragraph. (Nov. 10, 2004.)
[19] Specification, page 8, line 6.
[20] Specification, page 7, line 20.
[21] THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE, (2000 4TH ED.), INDETERMINATE: "Not precisely determined, determinable, or established": "Not precisely fixed, as to extent, size, nature, or number": "Lacking clarity or precision, as in meaning; vague": "Not fixed or known in advance": "Not leading up to a definite result or ending."

Barnhill discloses a golf ball with a "Novel Sound-Emitter Device."[22] This device, "shock-activated in nature, is provided to be silent through the practice swing, but automatically emits a sound upon the ball being struck, and it keeps sounding until the player finds it and wishes it silent for the next shot . . .."[23]

First, Barnhill fails to teach control of transmission of an electromagnetic signal. It thus discloses a different class of golf ball "transmitters." In fact, Barnhill *teaches away* from a ball which radiates electromagnetic energy because, "the internal components would have to be interiorly of the ball prior to shaping the ball."[24] Barnhill again *teaches away* from a golf ball containing an electromagnetic signal transmitter because it "can-not be inserted after shape-forming of the ball."[25] Thus, the actual teachings of Barnhill reinforce that one of ordinary skill in the art would **not be motivated** to combine Barnhill with Englemeier, because Englemeier describes an electromagnetic signal transmitter contained within a golf ball. The Federal Circuit's recent decision in *Winner International Royalty Corp. v. Wang*, 53 USPQ2d 1580, 1586-1587 (Fed. Cir. 2000), states:[26]

> .... When an obviousness determination is based on multiple prior art references, there must be a showing of some "teaching, suggestion, or reason" to combine the references. Gambro Lundia AB v. Baxter Healthcare Corp., 110 F.3d 1573, 1579, 42 USPQ2d 1378, 1383 (Fed. Cir. 1997) (also noting that the "absence of such a suggestion to combine is dispositive in an obviousness determination"). Whether motivation to combine the references was shown we hold a question of fact. See In re Dembiczak, 175 F.3d 994, 1000, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) (" [P]articular factual findings regarding the suggestion, teaching, or motivation to combine serve a number of important purposes . . .") (emphasis added); ... Evidence of a suggestion, teaching, or motivation to combine prior art references may flow, inter alia, from the references themselves, the knowledge of one of ordinary skill in the art, or from the nature of the problem to be solved. See Dembiczak, 175 F.3d at 999, 50 USPQ2d at 1617. Although a reference need not expressly teach that the disclosure contained therein should be combined with another, see Motorola, Inc. v. Interdigital Tech. Corp, 121 F.3d 1461, 1472, 43 USPQ2d

[22] Barnhill., column 6, line 64 through column 10, line 68; and Figures 6 – 11.
[23] Id., Abstract.
[24] Id., column 2, line 67.
[25] Id., column 3, line 10.
[26] See also *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 56 USPQ2d 1456, 1459 (Fed. Cir. 2000).

> 1481, 1489 (Fed. Cir. 1997), **the showing of combinability, in whatever form, must nevertheless be "clear and particular."** Dembiczak, 175 F.3d at 999, 50 USPQ2d at 1617.

It is respectfully submitted that neither of the applied references includes a "clear and particular" motivation to combine the teachings of the two references and on the contrary include conflicting teachings above identified. Therefore, Applicant submits that it is only through an impermissible hindsight reconstruction of Applicant's invention that the rejection of the claims can be understood, and that the rejection is not in compliance with MPEP § 2143.01.[27]

Furthermore, Barnhill fails to remedy the deficiencies of Englemeier. As accurately noted in the outstanding Final Rejection, Barnhill does not describe a golf ball with the claimed timing device. In particular, Barnhill teaches that "[s]ilencing . . . requires merely the minor task . . . of pushing an available rod . . . through the wall 24's hole 25, and interiorly of the device far enough that the outer body part . . . of the inner shell body 26 slides . . . past the latch 29; and that latching opens (disengages) the contact of the clip arm 39c and the screwbody 32's outer head 46."[28] Thus, the shock activated sounding device taught by Barnhill keeps sounding until the player finds it and wishes it silent for the next shot,[29] i.e. until the player manually shuts off the sound transmission.

Indeed, Barnhill like Englemeier fails to teach provision of a timing device and instead teaches transmission for an indeterminate period of time after actuation, depending on the length of time it takes for the golfer to locate the golf ball and manually deactivate the transmitter. Barnhill thus reinforces the Englemeier teaching of transmitting for an indeterminate time period and BOTH references in fact teach away from the claimed

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[27] MPEP § 2143.01 "Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge of one of ordinary skill in the art."
[28] Barnhill, column 9, lines 21-30.
[29] Id., Abstract.

invention in that neither reference teaches provision of a timing device to control transmission of a signal for a predetermined, i.e., determined in advance, time period.

Thus, it is respectfully submitted that the combined teachings of Englemeier and Barnhill fail to disclose or obviate the claimed structure of a distinct "timing device configured to control transmission of the electromagnetic signal for a predetermined time period after [shock] actuation of the switching device." In the absence of any such teachings, it is respectfully submitted that the combined teachings of Englemeier and Barnhill fail to substantiate a prima facie case of obviousness and that the final rejection of Claims 1 and 12 should be reversed.

B. The subject matter of Claim 2 is patentable over Englemeier and Barnhill.

Claim 2 depends from Claim 1 and further recites "a timer configured to turn the transmitter on upon actuation of the switching device and to turn the transmitter off a predetermined time after actuation of the switching device."

The Official Action rejects Claim 2 with the one line conclusion that "the combination of Englemeier and Barnhill discloses **a timer configured to turn on** based on the actuation of a switching device and turn off based upon a predetermined time."[30] Thus the Official Action ignores the additional claim language which states "a timer configured to turn the transmitter on . . .."

Although Barnhill describes a shock-actuated switching device where the switching device itself activates the sounding mechanism, neither Barnhill nor Englemeier teach or suggest a distinct timer configured to turn the transmitter on upon actuation of the switching device. In the absence of any such teachings, it is respectfully submitted that the combined teachings of Englemeier and Barnhill fail to substantiate a prima facie case of obviousness.

[30] Official Action, June 17, 2004, p.4 , paragraph 4.

As none of the cited prior art, individually or in combination, disclose or suggest all the elements of dependent Claim 2, Applicant respectfully submits the subject matter defined by Claims 2 is not rendered obvious by the asserted prior art.

C. The subject matter of Claim 3 is patentable over Englemeier and Barnhill.

Claim 3 depends from Claim 1 and further recites "a first timer configured to turn the transmitter on a predetermined time after actuation of the switching device; and a second timer configured to turn the transmitter off a predetermined time after actuation of the switching device." Claim 3 is based on the recognition that there is no need to transmit signal while the ball is in flight. It is therefore feasible to initiate transmission "a predetermined time after actuation of the switching device" and to cease transmission "a predetermined time after actuation of the switching device," under control of respective first and second timers.

The Official Action cites the Englemeier recitation that "the transmitter is controlled by a control unit, connected to the energy store in such a way that the transmitter unit generates periodic transmission signals."[31] However, this recitation does not suggest first and second timing devices, but a "rectangular waveform signal generated by the astable flip-flop . . . for pulsed operation." Continuous pulsed transmission once the energy store is charged/recharged and until the energy store is depleted is not a teaching of the claimed first and second timing devices recited in Claim 3. As the cited prior art, neither individually nor in combination, discloses or suggests all the elements of dependent Claim 3, Applicant respectfully submits that Claim 3 is not rendered obvious, and that Claim 3 is patentable.

D. The subject matter of Claim 4 is patentable over Englemeier and Barnhill.

Claim 4 depends from Claim 1 and further limits the claimed golf ball as including "at least one light emitting diode."

[31] Englemeier, column 2, lines 34-42.

The Official Action acknowledges that the combination of references does not include at least one light emitting diode, but argues that "one would be motivated to use a light, for example, to aid a user in locating the ball at dusk conditions when playing golf is still possible, but locating the ball becomes more of a challenge."[32] No suggestion of such a motivation is provided in the applied references themselves.

> MPEP § 2142 requires that "the prior art reference (or references when combined) must teach or suggest **all** the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)."

Applicants further take issue with the rejection of Claim 4 on the basis that the final rejection fails the "substantial evidence" test. The U.S. Supreme Court requires "substantial evidence" in support of finding of obviousness. *Dickinson v. Zurko*, 527 U.S. 150, 50 USPQ2d 1930 (1999). The Federal Circuit has held that "the USPTO's assessment that such a feature is "basic knowledge" or "common sense" is not substantial evidence." *In re Zurko*, 59 USPQ2d 1693 (Fed. Cir. 2001). Accordingly, the rejection of Claim 4 based on the finding that "one would be motivated to use a light, for example, to aid a user in locating the ball at dusk conditions when playing golf is still possible, but locating the ball becomes more of a challenge" is tantamount to the "basic knowledge" or "common sense" argument rejected by the Federal Circuit in *Zurko*, *supra*, and is therefore further traversed as not being based on substantial evidence.

As none of the cited prior art, individually or in combination, disclose or suggest all the elements of dependent Claim 4, Applicant submits the inventions defined by Claim 4 are not rendered obvious by the asserted prior art. In addition Claim 4, and Claims 21-22 depending therefrom, are patentable for at least these reasons and for the reasons stated in section A above.

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[32] Official Action, June 17, 2004, p.4 , paragraph 4.

E. The subject matter of Claims 10 and 11 is patentable over Englemeier and Barnhill.

Claims 10 and 11 recite a golf ball further comprising "an outer cover at least partially transparent to the electromagnetic signal." By virtue of their dependency from Claim 4, Claims 10 and 11 cover "an outer cover at least partially transparent to the electromagnetic signal" that is generated by the at least one light emitting diode.

Since none of the cited references teach or suggest an outer cover transparent to the electromagnetic signal generated by a light emitting diode, the Applicant simply argues from the MPEP § 2142, which states that "the prior art reference (or references when combined) must teach or suggest **all** the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)."

As none of the cited prior art, individually or in combination, disclose or suggest all the elements of dependent Claims 10 or 11, Applicant submits the inventions defined by Claims 10 or 11 are not rendered obvious by the asserted prior art. In addition, Claims 10 and 11, are patentable for at least these reasons and for the reasons stated in section A above.

CONCLUSION

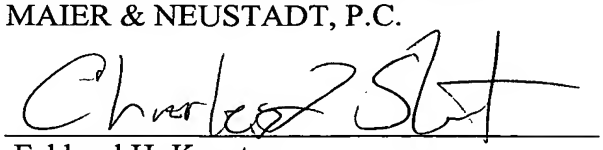
Applicant submits that Claims 1-20 patentably distinguish over the applied references. Consequently, the pending claims are believed to be patentably distinguishing over the cited prior art and in condition for allowance. An early and favorable action is respectfully requested.

IN ADDITION, Applicant respectfully requests that the Examiner Acknowledge the

IDS filed September 11, 2003. A copy of the September 11, 2003 IDS, the date-stamped filing receipt, and the references indicated as omitted are filed herewith.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Eckhard H. Kuesters
Attorney of Record
Registration No. 28,870

Charles J. Short
Registration No. 50,745

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)